ATTACHMENT I

PERFORMANCE SPECIFICATIONS
FOR
A FIRE STATION
RINGDOWN AND PAGING SYSTEM (RPS)
AT
SAN ANTONIO INTERNATIONAL AIRPORT

Revision Date
March 1, 2004

1. TABLE OF CONTENTS

1. TABLE OF CONTENTS 2
2. INTRODUCTION 3
3. SYSTEM OBJECTIVES 3
4. CURRENT SYSTEM AND INFRASTRUCTURE 4
4.1 Fire Station Layout 4
4.2 Current Ringdown System 4
4.3 Current Paging System 5
4.4 Other Infrastructure 5
5. REQUIRED PERFORMANCE CAPABILITIES 6
5.1 Ringdown Activation 6
5.2 Ringdown 6
5.3 Paging 7
5.4 Additional Feature 7
5.5 Optional Features 8
6. SYSTEM USES 8
7. PARTIAL INSTALLATION AND TESTING 8
8. COMPLETION OF THE INSTALLATION 8
9. ACCEPTANCE TESTING 9
9.1 Initial on-site performance demonstration 9
9.2 10-day operational test 9
9.3 Final acceptance 9
10. REMOVAL OF THE OBSOLETE SYSTEM 10
11. DOCUMENTATION AND TRAINING 10
12. WARRANTY AND MAINTENANCE 10
12.1 Replacements 11
12.2 Problem Resolution Procedures 11
12.3 Malfunction Report 11
12.4 SAT Responsibilities 11
12.5 Warranty Renewal 12
13. CONTINUING SUPPORT 12
14. SOFTWARE UPGRADES 13

2. INTRODUCTION

These specifications describe the required performance and capabilities of a Fire Station Ringdown and Paging System (RPS) for San Antonio International Airport (SAT).

For this specifications, a ringdown is described as: a means for the Federal Aviation Administration Air Traffic Control Tower (FAA ATCT) to alert the Fire Station of an aircraft emergency. The system must meet the requirements of FAA Advisory Circular 150/5210-7C.

These specifications represent the principal performance requirements for firms to follow in preparing proposals for the Airport Fire Station RPS. Where appropriate, these specifications refer to the firm that the City of San Antonio Aviation Department ultimately selects to provide this system as the "Contractor".

The installation of the RPS must be completed no later than **30** calendar days after signing of the contract and notice to proceed is issued.

3. SYSTEM OBJECTIVES

The City of San Antonio Aviation Department wishes to acquire the best RPS for its Fire Station at a reasonable price that will meet these basic objectives:

- Perform the desired system functions in the quickest and most accurate manner possible given the current state-of-the-art technology.
- Meet the requirements of FAA AC150/5210-7C.
- Improve the sound quality of the audio alerts/messages/conversations throughout the station as well as outside.
- Maximize communications speed.
- Ensure no interruption of ringdown/paging capabilities, through built-in redundancy and/or backup systems.
- Complete the ringdown/paging system installation process and transfer from the current system to the new system without interruption of the ringdown/paging capabilities.
- Complete the installation within the specified time frame.
- Maximizes the use of standardized materials/components considered as "off-the-shelf", and readily available, so that maintenance can be accomplished by Aviation Maintenance personnel as much as possible.
- Uses patch-panels (no punchdowns accepted) and descriptive tagging/identification of all the components and patch panels hook-ups for easy maintenance. Tagging is considered descriptive if room/location name or number is used.
- Provide for 25 percent expansion capability of the speakers and amplifier system.

4. CURRENT SYSTEM AND INFRASTRUCTURE

4.1 Fire Station Layout

- The layout of the firestation is composed of 2 apparatus bay areas (West and East) with the living quarters in the middle (see diagrams in Appendix 1 and 2):
    - downstairs: kitchen/dining/living area, joker stand (communications room), 2 offices (Officer's room and computer room), 2 sleeping areas and showers/restrooms, as well as a laundry/mechanical room
    - upstairs: the Chief's and secretary's offices, and restrooms in the middle, with a training room and gym on each side.

- There are 6 bay doors facing the runway (3 on each side) and 6 bay doors facing the backside parking lot (3 on each side).
- The FAA Tower and the airport terminals are located on the opposite side of the airfield than the Fire Station .
- There are 6 main rescue vehicles/apparatus facing the runway, as well as a truck and a Mobile Command Center vehicle, in the bay areas.
- There is a minimum crew of 6 and up to 8 at the station at all times (plus an additional 2 - the Chief and Secretary upstairs during normal business hours).

4.2 Current Ringdown System

- An above ground telephone line from the FAA to the Station is used to trigger the ringdown.
- There is one red ringdown phone located at the top of the FAA tower in the Controllers observation deck. Whenever FAA staff picks up the handset, the fire station ringdown system is automatically activated without any need for dialing, keying, or selecting.
- There are 3 red ringdown phones located at the Fire station (1 upstairs in the corridor between the Gym and the training room just outside the secretary's office, 1 downstairs in the "Joker" room, and 1 downstairs in the Officer's room). Whenever any of these 3 Fire Station red ringdown phones is picked up, it rings at the FAA Tower, without any need for dialing, keying or selecting.
- When it rings, it triggers the ringdown horns throughout the station, and once the red phone is picked up, the horns stop and the conversation can be heard through the ringdown speakers throughout the station and on the 4 outside walls of the station. There are approximately 10 horns located throughout the station, 2 upstairs, 2 downstairs, 2 in the bay areas, and 4 on the outside walls. There are approximately 21 ringdown speakers located throughout the station, 5 upstairs, 4 downstairs, 8 in the bay areas, and 4 on the outside walls.
- All the horns and ringdown speakers located in the bay areas and on the outside walls are weatherproof.

- There are also ringdown speakers located :
    - near the Aviation Assistant Director's office (Terminal 1, mezzanine, room M120),
    - at the Airport Communication center (Terminal 1 basement),
    - at the Airport Emergency Center (Terminal 1 basement next to the Communications Center)
    - in the Operations Manager's office (Terminal 2 first floor),
    - in the Operations Supervisor's office (Terminal 2 first floor, close to the Operations Manager's office).
- The ringdown also triggers the automatic opening of all the bay doors, turns off the stove and turns on some lights (regular white) throughout the station.
- On the Joker stand, the following switches are installed to allow for manual activation and reset:
    - 1 reset switch for the lights,
    - 1 reset switch for the gas to the stove,
    - 1 manual control switch for the lights,
    - 1 manual control switch for the ringdown horns,
    - 1 master overhead doors override switch with 2 pilot lights (red or green indicating if the doors are set on Automatic or Manual),
    - 12 door controllers.
- The ringdown speakers can also be used to listen to any of the 4 radio frequencies via a selector switch on the "Joker Stand". The 4 radio frequencies are: ATCT Ground Control, Airport Rescue and Fire Fighting (ARFF), City of San Antonio Fire Dept., and City of San Antonio EMS.

4.3 Current Paging System

- There is a paging capability from each fire station phone.
- There are approximately 30 paging speakers throughout the station, 7 upstairs, 7 downstairs, 12 in the bay areas and 4 on the outside walls (most of them co-located with the ringdown speakers) hooked up to the phone, so that anyone can page from any phone.
- All the paging speakers located in the bay areas and on the outside walls are weatherproof.
- There is also a telephone chime system with 2 chimes installed in the bay areas and 4 on the outside walls, for a total of 6.

4.4 Other Infrastructure

- A Fire Alarm Bell system is also installed. It is used for the Fire Station to declare its own alert. It is activated through a switch on the "Joker stand". There is one bell in each apparatus bay and one on each outside wall, for a total of 6 (the 2 upstairs are not being utilized).
- All communications equipment, phone/fiber optic connections are currently located in the laundry room downstairs. They are to be relocated prior to the installation of the new

ringdown to a closet located in the Exercise Room, against the ducts conduit, so that they can be in an air-conditioned environment. The current ringdown components will remain in the laundry room until removed per these specifications. The new ringdown components shall all be installed in the new communications closet upstairs.

- There is a 6-strand fiber optic cable (2 dark fibers available) running from the Fire Station to the Terminal 1 basement through the West Electrical Vault. There is a 12 strand-fiber optic cable running from the basement of Terminal 2 through that vault to the manhole under the FAA Tower, and a copper line hooked up to that end of the fiber optic going up the tower to the tower communications room (about 3 levels below the Controller's observation deck). This line is available for use in the RPS.
- SAT issued in August 2003 a Request For Proposal to install wireless capability throughout the airport (11B open standard). It is expected to be operational around April 2004.

5. REQUIRED PERFORMANCE CAPABILITIES

The major objectives translate into the following capability requirements:

5.1 Ringdown Activation

- Replace the ringdown triggering telephone line with the fiber optic, by installing all the necessary connections and running any additional wiring required.
- Enable the capability of a back up trigger through wireless.
- All ringdown systems should be activated whenever a ringdown phone is picked up, either at the FAA Tower or at the Fire Station.

5.2 Ringdown

- Replace all the ringdown horns, speakers, paging speakers and telephone chimes with a new system.
- The ringdown should automatically turn off the stove, turn on some lights throughout station, and open the bay doors.
- The capability for additional controls, including reset of those automations, and manual control should be the same as current. See Section 4.2.
- Total of 5 ringdown phones/devices:
    - 1 at the FAA tower (in Tower Cab, same as current location),
    - 1 upstairs (same location than current) in the Fire Station,
    - 1 on the joker stand, 1 in the officer’s room and 1 in the computer room downstairs in the Fire Station .
- Install as many ringdown speakers for necessary coverage of the fire station including the bay areas and the 4 outside walls. The location and quantity of the speakers shall be optimized for coverage and cost.

- All speakers located in the bay areas and outside should be weatherproof and be capable of compensating for outside noise (such as apparatus and aircraft).
- The extra ringdown speakers should be located :
    - near the Aviation Director's office (Terminal 1, mezzanine),
    - at the Airport Communication center (Terminal 1 basement),
    - at the Airport Emergency Center (Terminal 1 basement next to the Communications Center),
    - in the Operations Manager's office (Terminal 2 first floor),
    - in the Operations Supervisor's office (Terminal 2 next to the Operations Manager),
    - in the Assistant Aviation Director, Maintenance and Operations's office (T1 mezzanine, room M120),
    - in the City of San Antonio EMS dispatch center (Downtown San Antonio).
- Capability to listen to the ringdown over the Airport Fire Department radios so that off-station personnel can be alerted simultaneously.
- All equipment should be on UPS so no loss of power can occur (also on FAA side).
- Redundant warning lights for the ringdown should be installed per FAA AC150/5210-7C.
- The ringdown speakers should have the capability of listening to any of the 3 radio frequencies via a selector switch on the “Joker Stand”. The 3 radio frequencies are: ATCT Ground Control, Airport Rescue and Fire Fighting (ARFF), and City of San Antonio Fire Dept.
- The Fire Bell system shall be left as is.

5.3 Paging

- Must be capable of paging from any phone throughout the station, and providing a telephone chime in the bay areas and on the 4 outside walls.
- Install as many paging speakers for necessary coverage of the fire station including the bay areas and the 4 outside walls.
- All speakers located in the bay areas and outside shall be weatherproof and be capable of compensating for outside noise (such as apparatus and aircraft).
- The ringdown speakers may also be used as paging speakers, as long as an override feature is built-in for the ringdown system to override the paging system.

5.4 Additional Feature

- Contractor shall provide for 25 percent expansion capability of the speakers and amplifier system.

5.5 Optional Features

- System may be capable of automatically muting the television in the living area upon ringdown.
- System may give the FAA the capability to send preset audio and text messages or flight/aircraft data at ringdown activation, before the phone is picked up.

6. SYSTEM USES

The main scenarios for the ringdown presets are as follows:

- Alert 2: aircraft in-flight emergency. Depending on the aircraft type/size, SAFD will be required to send Units to the stand-by locations.
- Alert 3: aircraft crash. Some of the various cases are:
    - Departure End, Midfield, or Approach End, of Runway: 12R, 12L, 3, 21, 30L, or 30R.
    - Or outside of the Air Operations Area: North, South, East, or West.

7. PARTIAL INSTALLATION AND TESTING

A partial installation of the RPS will first be installed. It will consist of the ringdown and paging elements for:

- The FAA Tower, and
- One (1) joker stand
- One (1) apparatus bay area, and
- One (1) outside wall, and
- One (1) upstairs area, and
- One (1) downstairs area.

The detailed configuration of this partial installation will have to be pre-approved by the Aviation Department prior to installation.

The partial installation will be tested for a minimum of 10 days as described in Section 9. Once SAT has found that the partial installation has satisfactorily met the requirements of these specifications, SAT will give to the Contractor notice to proceed with the full installation.

8. COMPLETION OF THE INSTALLATION

Once the Contractor has received the notice to proceed with the full installation, he will complete the installation in the second bay area, the remainder of the living quarters, the remainder of the upstairs area, and the three remaining outside walls.

9. ACCEPTANCE TESTING

Acceptance testing is a required part of these specifications. The Contractor will be responsible for all costs associated with testing, performance of required modifications, and system service, maintenance, and support, until final SAT system acceptance.

During Acceptance Testing, the current ringdown and paging system will also remain in place and will still require a daily test by the FAA Tower. The acceptance testing will be coordinated with the FAA Tower to minimize the impact on the Air Traffic Controllers workload.

The acceptance testing will follow these steps:

9.1 Initial on-site performance demonstration

At completion of system installation, the Contractor must demonstrate to SAT representatives that the RPS meets all requirements of these specifications, including test runs of all hardware and software. After SAT approval of the results, the Contractor will be authorized to initiate the 10-day operational test.

9.2 10-day operational test

After SAT determines that the initial on-site performance demonstration has been successfully concluded, the 10-day operational test must commence. The RPS must be considered to have met the requirements of the operational test if it is fully operational for at least 10 consecutive days.

9.3 Final acceptance

To obtain final acceptance, the Contractor must undertake the following steps:

- Meet with SAT Project Manager to confirm that the Contractor has satisfactorily addressed all acceptance “punch list” items identified throughout the acceptance testing.
- Prepare and submit a final acceptance test report to SAT that summarizes the acceptance test process, including start and end dates of all test elements, a summary of system deficiencies identified in each phase, the corrective actions taken, and the results of the corrective actions.
- Demonstrate to SAT’s satisfaction that the Ringdown and Paging System meets specifications requirements.

SAT must provide the Contractor with final notice of system acceptance.

10. REMOVAL OF THE OBSOLETE SYSTEM

Once the Contractor has received notice of Final Acceptance of the RPS, he will be given the go-ahead to remove the various components of the obsolete system, including all speakers, horns, and red phones.

11. DOCUMENTATION AND TRAINING

The Contractor must provide two (2) system manual and documentation to include a Parts List and Wiring Diagrams. The manual and documentation must be bound in a loose-leaf binder, suitable for standard office reproduction.

The System manual must include documentation for system integrations.

The contractor must provide contract system training for 3 SAT staff and 2 FAA staff. The training shall be sufficient to prepare the SAT personnel to operate, maintain and program the complete system subsequent to the time of acceptance.

12. WARRANTY AND MAINTENANCE

The Contractor warrants, for a period of one (1) year from the final acceptance date, that the RPS will, under normal use and service, be free from defects and faulty workmanship, and operate in compliance with these specifications, except as set forth below.

The Contractor's obligation under this warranty is to repair or replace, at its option, defective equipment, software, parts, and associated labor at its expense. The Contractor warrants that replacement or repaired equipment furnished must be in accordance with current industry standards and that all labor must be in accordance with industry standards.

The warranty does not extend to the RPS or any part of, that SAT or its employees have subjected to unauthorized modifications, misuse, vandalism, or neglect.

The Contractor must assure that Original Equipment Manufacturer (OEM) warranties must benefit SAT for their full term. The Contractor must include preventative maintenance and repair or replacement, as required, for all new hardware and software components of the RPS that the Contractor provides, for the warranty period.

The Contractor must inform SAT of any improved or updated versions of the RPS software and must provide SAT with the option to have the Contractor install this software at no additional cost to SAT during any warranty period.

During the one-year warranty period, SAT desires the following maintenance provisions:

12.1 Replacements

Products covered by the appropriate level of support requiring repair or replacement must be shipped from the vendor no later than the next business day following the report of a replacement requirement.

Products shipped for advance replacement should be sent next day express at no charge to the customer.

Products must be shipped directly to the customer site, and may not be considered received at an off-site depot where they will await pick-up.

12.2 Problem Resolution Procedures

In the event a problem cannot be resolved and implemented through the vendor's technical support line, the vendor must respond by dispatching an employee from their technical field engineering department to be on-site at SAN ANTONIO INTERNATIONAL AIRPORT within a minimum of four business hours for the provision of on-site service.

The vendor's escalation path must be defined and described for problems not resolved in two hours. The escalation path must include the vendor's Research and Engineering resources with specific duties detailed and the timeframe of key resource involvement in the escalation path. It is required that the full extent of the escalation path must include the Director of Engineering direction of the team of engineers assisting the on-site engineer until the failure has been resolved.

The device vendor must provide a problem tracking system. Indicate the escalation procedure to resolve problems that require such escalation.

12.3 Malfunction Report

The contractor must furnish a written and signed malfunction incident report to SAT upon the completion of every maintenance action for which it is responsible. At a minimum, the report must include the following: the date and time of arrival, time spent for repair, type and number of item(s) repaired, description of the malfunction, the corrective actions taken, and the name of the Contractor's maintenance representative.

12.4 SAT Responsibilities

During the warranty period, SAT must abide by the following:

- With proper prior notice, as required in these specifications, SAT must permit the Contractor and its personnel, subject to security regulations and work schedules, access to equipment for maintenance purposes.
- SAT must permit Contractor sponsored modifications, agreed to by SAT, within a reasonable time after being notified by the Contractor. Such modifications must not interfere with normal day-to-day operations of SAT and must never be made without prior SAT knowledge and consent.
- SAT's responsibilities related to maintenance and repair must be limited to notifying the Contractor, and to limited attempts at trouble-shooting (not to exceed two hours), following telephone direction provided by the contractor.

12.5 Warranty Renewal

The separate cost proposal must include price quotes for four (4) additional years of warranty renewal on a per-year cost basis and include a detailed description of the services to be provided each year.

Subject to SAT's determination of satisfactory performance by the Contractor, and determination that renewal is in the best interest of SAT, SAT may elect to renew the warranty for an additional period of one (1), two (2), three (3), or four (4) years. SAT must notify the Contractor of its intent to exercise additional individual warranty periods at least sixty (60) calendar days in advance of the expiration date of the preceding warranty period.

13. CONTINUING SUPPORT

The Contractor must provide for unlimited telephone support for training and maintenance purposes throughout the system installation, testing, initial warranty, and warranty renewal periods.

This telephone support will consist of a 7-day, 24 hour technical support hot line available for questions relating to installation, configuration, usage, applications, and troubleshooting of hardware devices and network management software from a single telephone number.

It is highly desired that there be no callback delay involved in contacting a support person and the telephone support process must not require that a support person be paged or called in to respond to a support issue.

The technical support line must be manned by personnel employed by the product's vendor or a technician qualified to troubleshoot the products in question.
The technical support line must provide access to product support personnel and manufacturing engineers as an advanced level of escalation if required.

The technical support line must provide an escalation path to coordinate the next level of support in accordance with the service contract.

14. SOFTWARE UPGRADES

During each warranty period, the Contractor must offer software upgrades for all Contractor-provided software elements provided in the RPS. The cost of these upgrades, if SAT elects to have them incorporated in the RPS, must be included in the basic system cost for the initial warranty period, and in the renewal cost for the warranty renewal periods. SAT must approve of upgrade schedules and timing, and the Contractor must provide appropriate documentation and training.